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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NICHOLS, CHRISTOPHER J	
ART UNIT	**PAPER NUMBER**
1647	

DATE MAILED: 05/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/092,390	YU ET AL.	
	Examiner	Art Unit	
	Christopher J Nichols, Ph.D.	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-12* is/are pending in the application.

4a) Of the above claim(s) *6,9 and 12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-5,7,8,10 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Application, Amendments, and/or Claims

1. The Response and Amendment filed 11 March 2004 has been received and entered in full.

2. Newly submitted claims **6, 9,** and **12** are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: said claims are drawn to the nucleotide sequence of SEQ ID NO: 3, which was not searched and examined in the previous Office Action (17 September 2003). SEQ ID NO: 3 constitutes its own distinct and independent invention which is outside the scope of what was originally presented.

3. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims **6, 9,** and **12** are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Withdrawn Objections And/Or Rejections

5. The Rejection of claim **2** under 35 U.S.C. §112 ¶2 as set forth at pp. 13 ¶14-15 in the previous Office Action (17 September 2003) is *moot* in view of Applicant's cancellation of said claim (11 March 2004).

Maintained Objections And/Or Rejections

Claim Rejections - 35 USC § 101

6. Claims **3-5, 7-8,** and **10-11** are rejected under 35 U.S.C. §101 because the claimed invention is not supported by a specific, substantial, and credible asserted utility or a well-established utility for the reasons set forth at pp. 2-11 ¶3-7 in the previous Office Action (17 September 2003).

7. Applicant traverses said rejection in their response (11 March 2004) on the following grounds: **(a)** Applicant need only assert that the claimed invention is useful for any particular purpose, **(b)** the need for some experimentation does not render the claimed invention unpatentable pursuant to *In re Brana* (34 USPQ2d 1436 (Fed. Cir. 1995), **(c)** the nucleotide sequence of SEQ ID NO: 1 shares 100% homology with MEGF10 described in Nagase *et al.* (2001), **(d)** the "relevant literature" (Skolnick and Fetrow, Bork, Doerks *et al.*, Smith and Zhang, Brenner, Bork *et al.*) does not support the concept that function cannot be based on sequence and structural similarity; the USPTO has repeatedly attempted to use said references as a basis to deny the utility of nucleic acid sequences, **(e)** Applicants submit that the overwhelming majority of those skilled in the art "believe" in bioinformatic prediction, **(f)** to violate 35 U.S.C. 101 the claimed invention must be totally incapable of achieving a useful result, **(g)** according to the Examination Guidelines for the Utility Requirement the Applicant must asserted that the invention is useful for any particular purpose, **(h)** the claimed sequences have polymorphisms which have real world utility, **(i)** Applicant believes that a requirement for a "unique" utility has been set forth and the USPTO issues patents on batteries, automobile tires, golf balls, golf clubs, and treatments for a variety of human diseases, **(j)** the instantly claimed sequences have utility as "DNAchips" (Exibits A-J), **(k)** Applicant asserts that the claimed sequences have utility as

specific probes for human chromosome 5 containing the gene encoding the MEGF10, and **(l)** Applicant discusses their opinion of USPTO policy.

8. Applicant's arguments have been taken into consideration and are not found persuasive for the following reasons.

9. On "**(a)**", the instant Specification as filed does not have any *in vitro* data or art-accepted animal model data to establish a credible, specific, and substantial utility for the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 (encoded by the nucleic acid sequence of SEQ ID NO: 1). The identity, structure, function, nature, and activity of the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 (encoded by the nucleic acid sequence of SEQ ID NO: 1) is a question of fact to be proven by data and evidence not asserted by opinion and argument.

10. On "**(b)**", the fact pattern of *In re Brana* (34 USPQ2d 1436 (Fed. Cir. 1995) has nothing in common with the instant application. In *In re Brana*, the Examiner did not accept the use of cell models to establish utility as an anti-tumor agent and murine data as a reasonable approximation of a human disease. In the instant case, Applicant has assert in the complete absence of any data or evidence that the amino acid sequence (SEQ ID NO: 2 or SEQ ID NO: 4) encoded by the nucleotide sequence of SEQ ID NO: 1 is a human EGF-family protein. Therefore *In re Brana* is not relevant.

11. On "**(c)**", Nagase *et al.* (2001) "Prediction of the coding sequences of unidentified human genes. The complete sequences of 100 new cDNA clones from brain which code for large proteins in vitro." DNA Res. **8**(2): 85-95 teaches the sequence in question as a novel human protein with no known function. Therefore neither evidence nor data supports the asserted utility

of the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 (encoded by the nucleic acid sequence of SEQ ID NO: 1) as a human EGF-family protein.

12. On "**(d)**", in response to applicant's argument based upon the age of the references, contentions that the references are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977). Further the pitfalls and inaccuracies can be addressed through confirmation of the structure, identity, nature, and activity of the gene identified through sequence identity algorithms. All of the Applicant's assertions are solely based on prediction in the absence of any evidence. Applicant's review of the aforementioned references is noted. In summary, the references are used to support the Examiner's discussion of the underlying flaw of basing the structure and function of a novel sequence purely on sequence alignments and homology. Applicant's disagreement is noted. Nevertheless no evidence was presented to support a credible, specific, and substantial utility for the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 (encoded by the nucleic acid sequence of SEQ ID NO: 1) as a human EGF-family protein.

13. On "**(e)**", patent prosecution is a question of evidence not beliefs (see 37 C.F.R. §1.104). Currently, no persuasive evidence has been presented in the instant Application to the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 (encoded by the nucleic acid sequence of SEQ ID NO: 1) as having a credible, specific, and substantial utility as required by 35 U.S.C. §101. Neither beliefs nor consensus are necessary or sufficient to establish a credible, specific, and substantial utility nor was any requirement for Applicant's beliefs set forth in the previous Office Action (17 September 2003). Applicant's pontifications and musings on the subject of 35 U.S.C.

§101 are not relevant and thus are not given any weight to establish a credible, specific, and substantial utility the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 (encoded by the nucleic acid sequence of SEQ ID NO: 1) as a human EGF-family protein.

14. On "**(f)**", Applicant is in error. The Specification must demonstrate a credible, specific, and substantial utility for the inventions claimed. In the instant case, as no use or function can be ascribed to the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 (encoded by the nucleic acid sequence of SEQ ID NO: 1) it is, by default, totally incapable of anything as nothing is known.

15. On "**(g)**", while the identity, structure, function, and activity of the amino acid sequence (SEQ ID NO: 2 and 4) encoded by the nucleotide sequence of SEQ ID NO: 1 may constitute a fecund ground for investigation, the CAFC ruled in *Genentech Inc. v. Novo Nordisk A/S* (CA FC) **42 USPQ2d 1001** (1997) that patent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable. Citing *Brenner v. Manson,* **383 U.S. 519, 536, 148 USPQ 689, 696** (1966) (stating, in context of the utility requirement, that "a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion."). Therefore the CFAC stated that tossing out the mere germ of an idea does not constitute enabling disclosure. While every aspect of a generic claim certainly need not have been carried out by an inventor, or exemplified in the specification, reasonable detail must be provided in order to enable members of the public to understand and carry out the invention. That requirement has not been met in the instant specification with respect to the identity, structure, function, and activity of the amino acid sequence (SEQ ID NO: 2 and 4) encoded by the nucleotide sequence of SEQ ID NO: 1.

16. On "**(h)**", Applicant asserts in the absence of evidence and data that the nucleotide sequence of SEQ ID NO: 1 which encodes the amino acid sequence of SEQ ID NO: 2 and 4 may be used as specific markers as targets for the discovery of drugs that are associated with human disease(s) due to the presence of polymorphisms. However, since no disease, condition, illness, injury, disorder, sickness, ailment, syndrome, deficiency or affliction has been associated with the nucleotide sequence of SEQ ID NO: 1 or any distinguishing features such as a polymorphism, it necessitates significant and burdensome experimentation and research to discover if any maladies are associated with said nucleic acid and amino acid sequences. Applicant's pontifications and musings on the subject of nucleic acid polymorphisms are not relevant and thus are not given any weight to establish a credible, specific, and substantial utility the amino acid sequence of SEQ ID NO: 2 or SEQ ID NO: 4 (encoded by the nucleic acid sequence of SEQ ID NO: 1) as a human EGF-family protein.

17. On "**(i)**", the Specification asserts all utilities in the absence of evidence therefore additional research and experimentation is required to establish whether or not the nucleotide sequence of SEQ ID NO: 1 and the protein encoded therein have utility. Thus the claimed utility is not substantial. Also since it is not known where or if it is expressed the asserted utility is not specific. The Examiner notes that no requirement for a unique utility was set forth in the previous Office Action (17 September 2003). Next on the subject of patents on "treatments for a variety of human diseases", all such patents have meet the requirements of 35 U.S.C. §101 and §112, such is not the case with the instant application. The standard of patentability has not and will not be lowered (see MPEP §2105). Also, Applicant's analogies to batteries, automobile tires, golf balls, and golf clubs are not applicable. The products discussed by Applicant have an

inherent and obvious utility; this is not the case with newly identified biological molecules. Genes and proteins of unknown identity, structure, function, and activity have no inherent utility as it is not readily obvious or apparent as to their structure and function from their sequence alone. Applicant has to establish a utility for said biological molecules; this is not the case with the instant claims. No experiments have been performed nor has any data been included in the Specification. In the instant Specification, Applicant has asserted the identity and function of the included unknown biological materials in the complete and utter absence of any evidence. Predictions and argument do not constitute a real world utility as is required to satisfy the requirements of 35 U.S.C. §101 and 35 U.S.C. §112 ¶1.

18. On "**(j)**", in regards to the patents issued on "DNAchips", they are not under present examination. On the subject of the wide public use of DNAchips, this is not relevant to the instant prosecution. The Applicant includes a discussion of the financial success of using DNAchips but such companies as Affymetrix, GeneLogic, ABI-Perkin-Elmer, HySeq, Rosetta Inpharmatics and Incyte. The Examiner respectfully notes that none of the aforementioned entities, their inventions, their opinions, or their financial transactions are under instant examination. The issue at hand is whether or not the nucleotide sequence of SEQ ID NO: 1 which encodes the amino acid sequence of SEQ ID NO: 2 and SEQ ID NO: 4 has a credible, specific, and substantial utility as a human EGF-family protein. To date no evidence or data is present in the Specification or the Exhibits (A-J) to establish a credible, specific, and substantial utility for the nucleic and amino acid sequences instantly claimed.

19. On "**(k)**", as discussed above, MEGF10 is a novel predicted human protein of unknown function, therefore it adds no support to Applicant's assertions. Next the information in the first

paragraph of Section 5 of the instant Specification in fact establishes clearly states, "The NHPs described for the first time herein are novel proteins that can be expressed in..." (pp. 3 lines 24-27). No specificity is established as the transcripts are from a wide range of tissue sources, developmental stages, organs, and glands. Nor does the Specification specify the species from which the samples were taken, the levels at which the transcripts are present, which the sequences are present, or what conditions the transcripts were found. Also no evidence is presented to show that the experiments were actually performed. Thus no evidence is presented establish a specific utility only prophetic consideration of where the novel sequences may be found.

20. In addition, the instant Specification is prophetic as it clearly states, "The gene encoding the described NHPs is apparently encoded on human chromosome 5..." (pp. 17 lines 15-18). No evidence is presented to show that the experiments were actually performed. The Specification suggests that the nucleotide sequences of SEQ ID NO: 1 may be encoded on chromosome 5 but do not confirm it nor provide any specific location, species information, splice variants, exon positions, or tissue specificity. Therefore additional experimentation would be required to support his assertion and thus the asserted utility is not substantial. In addition, since no experiments have been shown and no data included in the Specification or the prosecution, it cannot be assumed that the nucleotide sequence of SEQ ID NO: 1 is actually on human chromosome 5 therefore the asserted utility is not specific.

21. Applicant claims that the instantly claimed nucleotide sequence is present in the known human genome sequence (Exhibit K). This does not meet the requirements for a credible, specific, and substantial utility. The region identified by Applicant has no known function. It is

readily apparent that Applicant has found a stretch of DNA in the database that could be almost any gene except a human EGF-family protein. It is also unclear whether the nucleotide sequence of SEQ ID NO: 1 is a coding region therefore Exhibit D only supports the Examiner's position that the nucleotide SEQ ID NO: 1 (which encodes the amino acid sequence of SEQ ID NO: 2) does not encode any known or identified protein. Therefore substantial experimentation would be required to elucidate its identity. Thus the asserted utility is neither specific nor substantial.

22. The MPEP §2145 clearly states that attorney argument is not evidence unless it is an admission, in which case, an examiner may use the admission in making a rejection (MPEP § 2129 and §2144.03). Applicant's muses, rhetorical questions, and postulations (the arguments of counsel) cannot take the place of evidence in the record. In the instant case the Applicant is asserting that the amino acid sequences (SEQ ID NO: 2 and SEQ ID NO: 4) encoded by the nucleotide sequence of SEQ ID NO: 1 is a human EGF-family protein while no data, information, or teaching supports this assertion in the instant Specification {see *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness.") and MPEP § 716.01(c)}. Therefore the statements made by the Applicant are assertions in the absence of evidence. As set forth in the previous Office Action (17 September 2004) the claimed sequences are not supported by a credible, specific, and substantial utility. No experimentation, development, or research has been represented as to establish the identity, structure, function, and activity of the amino acid sequences (SEQ ID NO: 2 and SEQ ID NO: 4) encoded by the nucleotide sequence of SEQ ID NO: 1.

23. On "**(I)**", the instant application is not in compliance with 35 U.S.C. 101 for the reasons as set forth in the previous Office Action (17 September 2003) and maintained herein. The Examiner *declines* to comment (see MPEP §1701) and respectfully directs all questions and concerns on this matter to the Office of the Commissioner pursuant to 35 U.S.C. §3.

24. The rejection of claims 3-5, 7-8, and 10-11 under 35 U.S.C. §101 is maintained.

Claim Rejections - 35 USC § 112

25. Claims **3-5, 7-8,** and **10-11** are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a well asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention for the reasons set forth at pp. 11 ¶8 of the previous Office Action (17 September 2003).

26. Applicant's arguments have been taken into consideration and are not found persuasive for the following reasons. The rejection under 35 U.S.C. §101 was maintained. Therefore, Applicant's arguments were not found persuasive and thus are not persuasive for the rejection under 35 U.S.C. §112 ¶1.

27. The rejection of claims 3-5, 7-8, and 10-11 under 35 U.S.C. §112 ¶1 is maintained.

28. Claims **3-5, 7-8,** and **10-11** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the

application was filed, had possession of the claimed invention for the reasons set forth at pp. 12-13 ¶9-13 of the previous Office Action (17 September 2003).

29. Applicant traverses said rejection in their response (11 March 2004) on the following grounds: **(a)** Applicant only needs to convey the invention with reasonable clarity to the skilled artisan, **(b)** the Examiner has misquoted the USPTO Guidelines (66 Fed. Reg. at 1106), **(c)** disclosure of the nucleic acid sequence of SEQ ID NO: 1 and amino acid sequence of SEQ ID NO: 2 is sufficient to satisfy the written description requirement of 35 U.S.C. §112 ¶1, and **(d)** the skilled artisan would readily be able to distinguish the claimed nucleic acids from other materials on the basis of the specific structural description provided.

30. Applicant's arguments have been taken into consideration and are not found persuasive for the following reasons.

31. On "**(a)**", the claims are drawn to a nucleotide sequence encoding the amino acid sequences of SEQ ID NO: 2 and 4, vectors, and host cells comprising same. The claims do not require that the polypeptide possess any particular conserved structure, or other distinguishing feature, such as a specific biological activity. Thus, the claims are drawn to a genus of polypeptides that is defined by sequence identity (such as a stretch of contiguous nucleotides). No examples, evidence, data, or guidance has been presented.

32. On "**(b)**", real or perceived typos in the previous Office Action (17 September 2003) do not evidence material possession of the claimed invention. Also MPEP §2163 teaches that any perceived failure by Office personal to follow the discussed Guidelines is neither appealable nor petitionable.

33. On "**(c)**", a biomolecule described only by a sequence, without any known or disclosed correlation between that function and the structure of the sequence is not a sufficient identifying characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence.

34. On "**(d)**", furthermore disclosure of a partial sequence without additional characterization of the sequence is not sufficient to evidence possession of the claimed invention {see *Amgen*, 927 F.2d at 1206, 18 USPQ2d at 1021}. Finally Applicant has not pointed out where the claims are supported, nor does there appear to be a written description of the claimed invention. Material possession of an invention cannot be established through arguments of counsel.

35. The rejection of claims 3-5, 7-8, and 10-11 under 35 U.S.C. §112 ¶1 is maintained.

Summary

36. No Claims are allowed.

37. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

38. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Christopher James Nichols, Ph.D.** whose telephone number is **(571) 272-0889**. The examiner can normally be reached on Monday through Friday, 8:00 AM to 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Gary Kunz, Ph.D.** can be reached on **(571) 272-0887**.

The fax number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

CJN
May 20, 2004

Elizabeth C. Kemmerer

ELIZABETH KEMMERER
PRIMARY EXAMINER